

WHAT IS CLAIMED IS:

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2. The secondary-battery control circuit as
25 claimed in claim 1, wherein said second path includes a

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first cutoff s

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a first comparing circuit comparing said first standard voltage with the voltage of said one or more secondary batteries, to detect whether said one or more

secondary batteries
a second
generating a second
a first
voltage correspond
e or more second
secondary batteries
a second
cond standard vo
d first voltage
excess current
secondary batteries
wherein
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5. The
aimed in claim 4
a third
generating a third
a third
andard voltage w

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secondary batteries, to detect whether said one or more secondary batteries are overcharged;

a fourth standard-voltage generating circuit generating a fourth standard voltage;

5 a second voltage detecting circuit detecting a voltage corresponding to the current flowing through said one or more secondary batteries while said one or more secondary batteries are being charged; and

10 a fourth comparing circuit comparing said fourth standard voltage with the voltage detected by said second voltage detecting circuit, to detect whether the excess current flows through said one or more secondary batteries,

15 wherein said first cutoff switch is controlled based on outputs of said third comparing circuit and said fourth comparing circuit.

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6. The secondary-battery control circuit as claimed in claim 1, wherein said system, to which the second load current is supplied through said second path, includes a remaining-charge indicating IC (Integrated
25 Circuit) used for indicating a remaining charge of said

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one or more secondary batteries, or a resetting IC used for resetting the system.

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7. A battery pack, comprising:

one or more secondary batteries connected in series or parallel; and

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a secondary-battery control circuit,

wherein said secondary-battery control circuit

includes a first path supplying a first load current

from said one or more secondary batteries to a system,

and including a first cutoff switch; and a second path

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supplying a second load current from said one or more

secondary batteries to the system, wherein said first

cutoff switch is turned off if a voltage of said one or

more secondary batteries is lower than a first

predetermined voltage, or if the first load current is

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greater than a predetermined current, thereby cutting

off the first load current to the system.

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8. The battery pack as claimed in claim 7,
wherein said second path includes a second cutoff switch
controlled independently of said first cutoff switch.

9. The battery pack as claimed in claim 8,
wherein said second cutoff switch is turned off if the
10 voltage of said one or more secondary batteries is
higher or lower than a second predetermined voltage.

15 10. The battery pack as claimed in claim 8,
wherein said secondary-battery control circuit further
includes:

a first standard-voltage generating circuit
20 generating a first standard voltage;

a secondary-battery voltage detecting circuit
detecting the voltage of said one or more secondary
batteries;

a first comparing circuit comparing said first
25 standard voltage with the voltage of said one or more

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secondary batteries, to detect whether said one or more secondary batteries are over-discharged;

a second standard-voltage generating circuit generating a second standard voltage;

5 a first voltage detecting circuit detecting a voltage corresponding to a current flowing through said one or more secondary batteries while said one or more secondary batteries are being discharged; and

10 a second comparing circuit comparing said second standard voltage with the voltage detected by said first voltage detecting circuit, to detect whether an excess current flows through said one or more secondary batteries,

15 wherein said first cutoff switch is controlled based on outputs of said first comparing circuit and said second comparing circuit.

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11. The battery pack, as claimed in claim 10, wherein said secondary-battery control circuit further includes:

25 a third standard-voltage generating circuit generating a third standard voltage;

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wherein said first cutoff switch is controlled based on outputs of said third comparing circuit and said fourth comparing circuit.

12. The secondary-battery control circuit as
claimed in claim 7, wherein said system, to which the
25 second load current is supplied through said second path,

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14. The portable device as claimed in claim 13, wherein said second path includes a second cutoff switch controlled independently of said first cutoff switch.

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15. The portable device as claimed in claim 14, wherein said second cutoff switch is turned off if the voltage of said one or more secondary batteries is higher or lower than a second predetermined voltage.

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16. The portable device as claimed in claim 14, wherein said secondary-battery control circuit further includes:

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a first standard-voltage generating circuit

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wherein said first cutoff switch is controlled based on outputs of said first comparing circuit and said second comparing circuit.

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a third comparing circuit comparing said third standard voltage with the voltage of said one or more secondary batteries, to detect whether said one or more secondary batteries are overcharged;

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a second voltage detecting circuit detecting a voltage corresponding to the current flowing through said one or more secondary batteries while said one or more secondary batteries are being charged; and

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wherein said first cutoff switch is controlled based on outputs of said third comparing circuit and said fourth comparing circuit.

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